

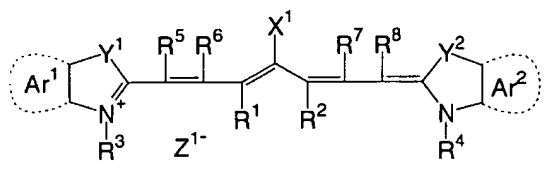
## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

### LISTING OF CLAIMS:

1. **(currently amended):** A planographic printing plate precursor comprising:  
on a substrate, a photosensitive layer containing an infrared absorbing agent, a sulfonium salt polymerization initiator, a polymerizable compound and a binder polymer,  
wherein the infrared absorbing agent is a cyanine dye represented by the following formula (a):

formula (a)

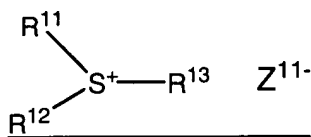


wherein, in the formula (a), X<sup>1</sup> represents -NPh<sub>2</sub>; R<sup>1</sup> and R<sup>2</sup> each independently represents a hydrocarbon group having 1 to 12 carbon atoms; Ar<sup>1</sup> and Ar<sup>2</sup> may be the same or different and each represents an aromatic hydrocarbon group which may have a substituent group; Y<sup>1</sup> and Y<sup>2</sup> may be the same or different and each represents a sulfur atom or a dialkyl methylene group having 12 or less carbon atoms; R<sup>3</sup> and R<sup>4</sup> may be the same or different and each represents a hydrocarbon group containing 20 or less carbon atoms, which may have a

substituent group;  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  may be the same or different and each represents a hydrogen atom or a hydrocarbon group having 12 or less carbon atoms; and  $Z^{1-}$  represents a counter anion,

wherein the sulfonium salt polymerization initiator is a sulfonium salt represented by the formula (I):

formula (I)



wherein, in the formula (I),  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  may be the same or different, and each represents an aryl group containing 20 or less carbon atoms; at least two of the aryl groups are substituted with a chlorine atom; and  $Z^{11-}$  represents a counterion selected from the group consisting of a halogen ion, a perchlorate ion, a tetrafluoroborate ion, a hexafluorophosphate ion, a carboxylate ion and a sulfonate ion,

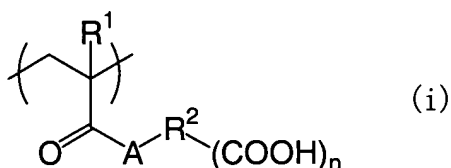
wherein the central line average surface roughness (Ra) of the surface of the substrate on which the photosensitive layer is arranged is in the range of 0.35 to 0.55  $\mu\text{m}$ .

**2. (original):** A planographic printing plate precursor according to claim 1, wherein the substrate is an aluminum substrate.

**3. (original):** A planographic printing plate precursor according to claim 2, wherein the surface of the aluminum substrate is subjected to at least one surface treatment

selected from the group consisting of mechanical surface roughening, chemical etching, electrolytic grinding treatment, and electrochemical surface roughening.

**4. (currently amended):** A planographic printing plate precursor according to claim 1, wherein the binder polymer has a repeating unit represented by the following general-formula (i):



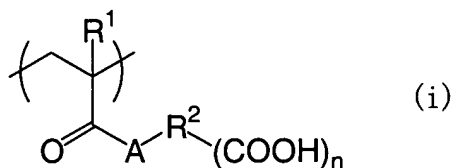
wherein in general-formula (i),  $R^1$  represents a hydrogen atom or a methyl group;  $R^2$  represents a linking group composed of two or more atoms selected from the group consisting of a carbon atom, a hydrogen atom, an oxygen atom, a nitrogen atom and a sulfur atom, wherein the total number of atoms in  $R^2$  is 2 to 82; A represents an oxygen atom or  $-NR^3-$  wherein  $R^3$  represents a hydrogen atom or a monovalent hydrocarbon group having 1 to 10 carbon atoms; and n is an integer of 1 to 5.

**5. (original):** A planographic printing plate precursor according to claim 4, wherein the substrate is an aluminum substrate.

**6. (original):** A planographic printing plate precursor according to claim 5, wherein the surface of the aluminum substrate is subjected to at least one surface treatment selected from the group consisting of mechanical surface roughening, chemical etching, electrolytic grinding treatment, and electrochemical surface roughening.

**7. (currently amended):** A planographic printing plate precursor comprising: on a substrate, a photosensitive layer containing an infrared absorbing agent, a sulfonium salt polymerization initiator, a polymerizable compound, and a binder polymer having a repeating unit represented by the following general-formula (i), wherein the sulfonium salt polymerization initiator is a sulfonium salt represented by the following general-formula (I), and the central line average surface roughness (Ra) of the surface of the substrate on which the photosensitive layer is arranged is in the range of 0.35 to 0.55  $\mu\text{m}$ ,

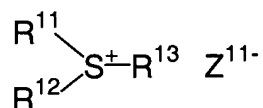
General-formula (i)



wherein in general-formula (i),  $R^1$  represents a hydrogen atom or a methyl group;  $R^2$  represents a linking group composed of two or more atoms selected from the group consisting of a carbon atom, a hydrogen atom, an oxygen atom, a nitrogen atom and a sulfur atom, wherein the total number of atoms in  $R^2$  is 2 to 82; A represents an oxygen atom or  $-\text{NR}^3-$ ,

wherein  $R^3$  represents a hydrogen atom or a monovalent hydrocarbon group having 1 to 10 carbon atoms; and  $n$  is an integer of 1 to 5;

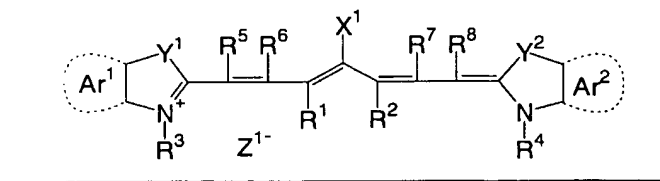
General formula (I)



wherein in general formula (I),  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  may each be the same or different, and each represents a hydrocarbon group having 20 or less carbon atoms which may have at least one substituent group selected from the group consisting of a halogen atom, a nitro group, an alkyl group having 12 or less carbon atoms, an alkoxy group having 12 or less carbon atoms and an aryloxy group having 12 or less carbon atoms an aryl group containing 20 or less carbon atoms; at least two of the aryl groups are substituted with a chlorine atom; and  $Z^{11-}$  represents a counterion selected from the group consisting of a halogen ion, a perchlorate ion, a tetrafluoroborate ion, a hexafluorophosphate ion, a carboxylate ion, and a sulfonate ion,

wherein the infrared absorbing agent is a cyanine dye represented by the following formula (a):

Formula (a)



wherein, in the formula (a), X<sup>1</sup> represents -NPh<sub>2</sub>; R<sup>1</sup> and R<sup>2</sup> each independently represents a hydrocarbon group having 1 to 12 carbon atoms; Ar<sup>1</sup> and Ar<sup>2</sup> may be the same or different and each represents an aromatic hydrocarbon group which may have a substituent group; Y<sup>1</sup> and Y<sup>2</sup> may be the same or different and each represents a sulfur atom or a dialkyl methylene group having 12 or less carbon atoms; R<sup>3</sup> and R<sup>4</sup> may be the same or different and each represents a hydrocarbon group containing 20 or less carbon atoms, which may have a substituent group; R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup> and R<sup>9</sup> may be the same or different and each represents a hydrogen atom or a hydrocarbon group having 12 or less carbon atoms; and Z<sup>1-</sup> represents a counter anion.

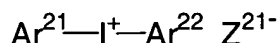
**8. (original):** A planographic printing plate precursor according to claim 7, wherein the substrate is an aluminum substrate.

**9. (original):** A planographic printing plate precursor according to claim 8, wherein the surface of the aluminum substrate is subjected to at least one surface treatment selected from the group consisting of mechanical surface roughening, chemical etching, electrolytic grinding treatment, and electrochemical surface roughening.

**10. (currently amended):** A planographic printing plate precursor according to claim 7, wherein the photosensitive layer further comprises at least one of iodonium salt

represented by the following ~~general~~-formula (II) and diazonium salt represented by the following ~~general~~-formula (III) in addition to the sulfonium salt polymerization initiator;

~~General~~-formula (II)



wherein in ~~general~~-formula (II),  $\text{Ar}^{21}$  and  $\text{Ar}^{22}$  each independently represents an aryl group having 20 or less carbon atoms which may have a substituent group selected from the group consisting of a halogen atom, a nitro group, an alkyl group having 12 or less carbon atoms, an alkoxy group having 12 or less carbon atoms and an aryloxy group having 12 or less carbon atoms; and  $\text{Z}^{21-}$  represents a counterion selected from the group consisting of a halogen ion, a perchlorate ion, a tetrafluoroborate ion, a hexafluorophosphate ion, a carboxylate ion, and a sulfonate ion;

~~General~~-formula (III)



wherein in ~~general~~-formula (III),  $\text{Ar}^{31}$  represents an aryl group having 20 or less carbon atoms which may have a substituent group selected from the group consisting of a halogen atom, a nitro group, an alkyl group having 12 or less carbon atoms, an alkoxy group having 12 or less carbon atoms, an aryloxy group having 12 or less carbon atoms, an alkylamino group having 12 or less carbon atoms, a dialkylamino group having 12 or less carbon atoms, an

arylamino group having 12 or less carbon atoms and a diarylamino group having 12 or less carbon atoms; and  $Z^{31-}$  represents a counterion selected from the group consisting of a halogen ion, a perchlorate ion, a tetrafluoroborate ion, a hexafluorophosphate ion, a carboxylate ion and a sulfonate ion.

**11. (original):** A planographic printing plate precursor according to claim 10, wherein the substrate is an aluminum substrate.

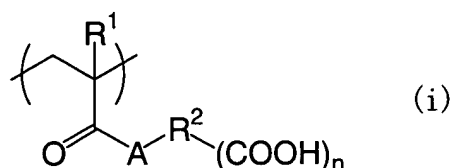
**12. (original):** A planographic printing plate precursor according to claim 11, wherein the surface of the aluminum substrate is subjected to at least one surface treatment selected from the group consisting of mechanical surface roughening, chemical etching, electrolytic grinding treatment, and electrochemical surface roughening.

**13. (currently amended):** A planographic printing plate precursor comprising:  
on a substrate, a photosensitive layer containing an infrared absorbing agent, a sulfonium salt polymerization initiator, a polymerizable compound, and a binder polymer, wherein the binder polymer has a repeating unit represented by the following ~~general~~ formula (i), the polymerizable compound is an addition-polymerizable compound having at least one ethylenically unsaturated double bond, the sulfonium salt polymerization initiator is a sulfonium salt represented by the following ~~general~~ formula (I), and the central line average surface



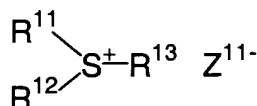
roughness (Ra) of the surface of the substrate on which the photosensitive layer is arranged is in the range of 0.35 to 0.55  $\mu\text{m}$ ,

General-formula (i)



wherein in general-formula (i),  $\text{R}^1$  represents a hydrogen atom or a methyl group;  $\text{R}^2$  represents a linking group composed of two or more atoms selected from the group consisting of a carbon atom, a hydrogen atom, an oxygen atom, a nitrogen atom and a sulfur atom, wherein the total number of atoms in  $\text{R}^2$  is 2 to 82; A represents an oxygen atom or  $\text{---NR}^3\text{---}$  where  $\text{R}^3$  represents a hydrogen atom or a monovalent hydrocarbon group having 1 to 10 carbon atoms; and n is an integer of 1 to 5;

General-formula (I)

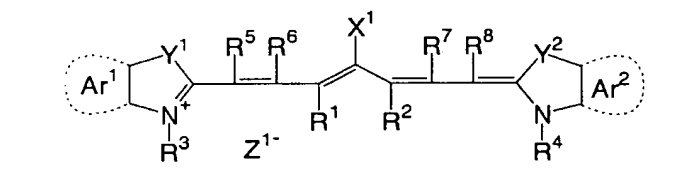


wherein in general-formula (I),  $\text{R}^{11}$ ,  $\text{R}^{12}$  and  $\text{R}^{13}$  may each be the same or different and each represents a hydrocarbon group having 20 or less carbon atoms which may have at least one substituent group selected from the group consisting of a halogen atom, a nitro group, an

~~alkyl group having 12 or less carbon atoms, an alkoxy group having 12 or less carbon atoms~~  
~~and an aryloxy group having 12 or less carbon atoms~~ an aryl group containing 20 or less carbon  
atoms; at least two of the aryl groups are substituted with a chlorine atom; and  $Z^{1-}$  represents  
a counterion selected from the group consisting of a halogen ion, a perchlorate ion, a  
tetrafluoroborate ion, a hexafluorophosphate ion, a carboxylate ion, and a sulfonate ion,

wherein the infrared absorbing agent is a cyanine dye represented by the following  
formula (a):

Formula (a)



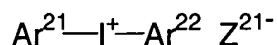
wherein, in the formula (a),  $X^1$  represents  $-NPh_2$ ;  $R^1$  and  $R^2$  each independently  
represents a hydrocarbon group having 1 to 12 carbon atoms;  $Ar^1$  and  $Ar^2$  may be the same or  
different and each represents an aromatic hydrocarbon group which may have a substituent  
group;  $Y^1$  and  $Y^2$  may be the same or different and each represents a sulfur atom or a dialkyl  
methylene group having 12 or less carbon atoms;  $R^3$  and  $R^4$  may be the same or different and  
each represents a hydrocarbon group containing 20 or less carbon atoms, which may have a  
substituent group;  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  may be the same or different and each represents a

hydrogen atom or a hydrocarbon group having 12 or less carbon atoms; and Z<sup>1-</sup> represents a counter anion.

**14. (original):** A planographic printing plate precursor according to claim 13, wherein the substrate is an aluminum substrate.

**15. (original):** A planographic printing plate precursor according to claim 14, wherein the surface of the aluminum substrate is subjected to at least one surface treatment selected from the group consisting of mechanical surface roughening, chemical etching, electrolytic grinding treatment, and electrochemical surface roughening.

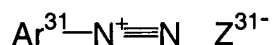
**16. (currently amended):** A planographic printing plate precursor according to claim 13, wherein the photosensitive layer further comprises at least one of the iodonium salt represented by the following ~~general~~-formula (II) and the diazonium salt represented by the following ~~general~~-formula (III) in addition to the sulfonium salt polymerization initiator,  
~~General~~-formula (II)



wherein in ~~general~~-formula (II), Ar<sup>21</sup> and Ar<sup>22</sup> each independently represents an aryl group having 20 or less carbon atoms which may have a substituent group selected from the group consisting of a halogen atom, a nitro group, an alkyl group having 12 or less carbon

atoms, an alkoxy group having 12 or less carbon atoms and an aryloxy group having 12 or less carbon atoms; and  $Z^{21-}$  represents a counterion selected from the group consisting of a halogen ion, a perchlorate ion, a tetrafluoroborate ion, a hexafluorophosphate ion, a carboxylate ion, and a sulfonate ion;

~~General~~ formula (III)



wherein in ~~general~~ formula (III),  $\text{Ar}^{31}$  represents an aryl group having 20 or less carbon atoms which may have a substituent group selected from the group consisting of a halogen atom, a nitro group, an alkyl group having 12 or less carbon atoms, an alkoxy group having 12 or less carbon atoms, an aryloxy group having 12 or less carbon atoms, an alkylamino group having 12 or less carbon atoms, a dialkylamino group having 12 or less carbon atoms, an arylamino group having 12 or less carbon atoms and a diarylamino group having 12 or less carbon atoms; and  $Z^{31-}$  represents a counterion selected from the group consisting of a halogen ion, a perchlorate ion, a tetrafluoroborate ion, a hexafluorophosphate ion, a carboxylate ion, and a sulfonate ion.

**17. (original):** A planographic printing plate precursor according to claim 16, wherein the substrate is an aluminum substrate.

**18. (original):** A planographic printing plate precursor according to claim 17, wherein the surface of the aluminum substrate is subjected to at least one surface treatment selected from the group consisting of mechanical surface roughening, chemical etching, electrolytic grinding treatment, and electrochemical surface roughening.